SEQ ID NO 1, and

(C) a sequence which hybridizes with the sequence according to SEQ ID NO 1 under stringent conditions,

wherein said sequence (A), (B) and (C) codes for a plant protein having fucosyl transferase activity.

A1 CONT.

36. A DNA molecule comprising a sequence complementary to a sequence selected from the group consisting of

(A) a sequence according to SEQ ID NO 1 with an open reading frame from base pair 211 to base pair 1740,

(B) a sequence which is at least 50% homologous with the sequence according to SEQ ID NO 1, and

(C) a sequence which hybridizes with the sequence according to SEQ ID NO 1 under stringent conditions,

wherein said sequence of (A), (B) and (C) codes for a plant protein having fucosyl transferase activity.

37. The DNA molecule according to claim 35 coding for a protein having GlcNAc-α1,3-fucosyl transferase activity.

38. The DNA molecule according to claim 35 coding for a protein having core-(α1,3-fucosyl transferase activity.

39. The DNA molecule according to claim 35, wherein said sequence is at least 70-80% homologous with the sequence according to SEQ ID NO 1.

40. The DNA molecule according to claim 35, wherein said sequence is at least 95% homologous with the sequence according to SEQ ID NO 1.

41. The DNA molecule according to claim 35 comprising between about 2150 and about 2250 base pairs.

42. The DNA molecule according to claim 35 comprising about 2198 base pairs.

43. A DNA molecule comprising a sequence selected from the group consisting of

a sequence according to SEQ ID NO 3,

a sequence which is at least 85% homologous with the sequence according to SEQ ID NO 3, and

a sequence which hybridizes with the sequence according to SEQ ID NO 3 under stringent conditions.

44. A DNA according to claim 43, wherein the sequence is at least 95% homologous with the sequence according to SEQ ID NO 3.

45. A DNA molecule comprising a partial sequence of said DNA molecule according to claim 35, wherein said sequence is at least 80% homologous with said SEQ ID NO 1 and has a size of 20 to 200 base pairs.

46. The DNA molecule according to claim 45, said molecule being covalently associated with a detectable marker substance.

47. A biologically functional vector comprising said DNA molecule according to claim 35.

48. A biological vector comprising parts of said DNA molecule according to claim 35 of different length, said parts having at least 20 base pairs.

49. A biologically functional vector comprising said DNA molecule according to claim 35, wherein said DNA molecule is inversely orientated with respect to the promotor.

50. A biologically functional vector comprising parts of said DNA molecule according to claim 35 of different lengths, wherein said DNA molecule parts are inversely orientated with respect to the promotor.

51. A DNA molecule coding for a ribozyme having two sequence sections, wherein each sequence section has a length of at least 10 to 15 base pairs, and

is complementary to a sequence section of said DNA molecule according to claim 35,

wherein said ribozyme complexes and cuts the mRNA transcribed by a natural GlcNAc-α1,3-fucosyl transferase DNA molecule.

A1 Cont.

52. A biologically functional vector comprising said DNA molecule according to claim 51.

53. A method of preparing a cDNA comprising a DNA molecule according to claim 35 comprising

isolating RNA from cells selected from the group consisting of insect cells, plant cells and hypocotylous cells, and

adding a reverse transcriptase and primers thereto to effect a reverse transcription with said RNA and prepare said cDNA.

54. A method of cloning a GlcNAc-α1,3-fucosyl transferase comprising

cloning said DNA molecule according to claim 35 into a vector,

transfecting said vector into a host,

selecting and amplifying transfected host cells, wherein said host cell lines express the active GlcNAc-α1,3-fucosyl transferase.

55. A method of preparing recombinant hosts selected from the group consisting

of host cells, plant cells, insect cells, plants and insects, wherein the production of GlcNAc-α-1,3-fucosyl transferase is suppressed or inhibited, comprising

inserting into a recombinant host, a biologically functional vector which comprises a DNA molecule according to claim 35, wherein said DNA sequence comprises a deletion, insertion or substitution mutation.

56. A method of preparing recombinant hosts selected from the group consisting of host cells, plant cells, insect cells, plants and insects wherein the production of GlcNAc-α-1,3-fucosyl transferase is suppressed or inhibited, comprising

inserting into a recombinant host, a biologically functional vector which comprises parts of said DNA molecule according to claim 35 of different length, said parts having at least 20 base pairs, wherein said DNA sequence comprises a deletion, insertion or substitution mutation.

57. A method of preparing recombinant hosts selected from the group consisting of host cells, plant cells, insect cells, plants and insects wherein the production of GlcNAc-α-1,3-fucosyl transferase is suppressed or inhibited, comprising

inserting into a recombinant host, a biologically functional vector which comprises a DNA molecule according to claim 35, wherein said DNA sequence is inversely orientated with respect to the promoter.

58. A method of preparing recombinant hosts selected from the group consisting

of host cells, plant cells, insect cells, plants and insects wherein the production of GlcNAc-α-1,3-fucosyl transferase is suppressed or inhibited, comprising

inserting into a recombinant host, a biologically functional vector which comprises parts of said DNA molecule according to claim 35 of different length, said parts having at least 20 base pairs, wherein said DNA sequence is inversely orientated with respect to the promoter.

59. A method of preparing recombinant hosts selected from the group consisting of host cells, plant cells, insect cells, plants and insects wherein the production of GlcNAc-α-1,3-fucosyl transferase is suppressed or inhibited, comprising

inserting into a recombinant host, a biologically functional vector which comprises a DNA molecule according to claim 51, wherein said DNA sequence is inversely orientated with respect to the promoter.

60. A method of preparing recombinant hosts selected from the group consisting of host cells, plant cells, insect cells, plants and insects wherein the production of GlcNAc-α-1,3-fucosyl transferase is suppressed or inhibited, comprising

inserting into a recombinant host, a biologically functional vector which comprises a DNA molecule according to claim 51, wherein said DNA sequence comprises a deletion, insertion or substitution mutation.

61. A method of preparing recombinant hosts selected from the group consisting

of host cells, plant cells, insect cells, plants and insects, comprising

inserting a DNA molecule according to claim 35 into the genome of said host at the position of a non-mutated, homologous sequence,

wherein said DNA sequence comprises a deletion, insertion or substitution mutation.

62. A recombinant host prepared according to said method according to claim 60, wherein its GlcNAc-α1,3-fucosyl transferase production is suppressed.

63. A recombinant host prepared according to said method according to claim 60, wherein its GlcNAc-α1,3-fucosyl transferase production is completely inhibited.

64. A recombinant host prepared according to said method according to claim 61, wherein its GlcNAc-α1,3-fucosyl transferase production is suppressed.

65. A recombinant host prepared according to said method according to claim 61, wherein its GlcNAc-α1,3-fucosyl transferase production is completely inhibited.

66. A peptide nucleic acid molecule comprising a base sequence complementary to the sequence of said DNA molecule according to claim 35.

67. A peptide nucleic acid molecule comprising a partial sequence of a base

sequence complementary to the sequence of said DNA molecule according to claim 35.

68. A peptide nucleic acid molecule comprising a base sequence corresponding to the sequence of said DNA molecule according to claim 35.

69. A peptide nucleic acid molecule comprising a partial sequence of the sequence of said DNA molecule according to claim 35.

70. A method of producing a host selected from the group consisting of plants, insects, cells, plant cells and insect cells having blocked expression of GlcNAc-α1,3-fucosyl transferase, comprising

inserting into said host a peptide nucleic acid molecule according to claim 66.

71. The method according to claim 70, wherein said expression is blocked at the transcription or translation level.

72. A method of producing a host selected from the group consisting of plants, insects, cells, plant cells and insect cells having blocked expression of GlcNAc-α1,3-fucosyl transferase, comprising

inserting into said host a peptide nucleic acid molecule according to claim 66.

73. The method according to claim 72, wherein said expression is blocked at the transcription or translation level.

74. A method of producing a host selected from the group consisting of plants, insects, cells, plant cells and insect cells having blocked expression of GlcNAc-α1,3-fucosyl transferase, comprising

inserting into said host a peptide nucleic acid molecule according to claim 68.

75. The method according to claim 74, wherein said expression is blocked at the transcription or translation level.

76. A method of producing recombinant glycoprotein, comprising

transfecting a recombinant host according to claim 62, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

77. A method of producing recombinant glycoprotein, comprising

transfecting a recombinant host according to claim 63, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

78. A method of producing recombinant glycoprotein, comprising

transfecting a recombinant host according to claim 64, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

79. A method of producing recombinant glycoprotein, comprising

transfecting a recombinant host according to claim 65, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

80. A method of producing recombinant glycoprotein, comprising

transfecting a recombinant host, which is prepared according to the method of claim 70, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

81. A method of producing recombinant glycoprotein, comprising

transfecting a recombinant host, which is prepared according to the method of claim 72, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

82. A method of producing recombinant glycoprotein, comprising

transfecting a recombinant host, which is prepared according to the method of claim

74, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

83. A method of producing human recombinant glycoprotein, comprising

transfecting a recombinant host according to claim 62, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

84. A method of producing human recombinant glycoprotein, comprising

transfecting a recombinant host according to claim 63, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

85. A method of producing human recombinant glycoprotein, comprising

transfecting a recombinant host according to claim 64, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

86. A method of producing human recombinant glycoprotein, comprising

transfecting a recombinant host according to claim 65, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

87. A method of producing human recombinant glycoprotein, comprising

transfecting a recombinant host, which is prepared according to the method of claim 70, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

88. A method of producing human recombinant glycoprotein, comprising

transfecting a recombinant host, which is prepared according to the method of claim 72, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

89. A method of producing human recombinant glycoprotein, comprising

transfecting a recombinant host, which is prepared according to the method of claim 74, with a gene that expresses said glycoprotein, and

expressing said recombinant glycoprotein.

90. A method of selecting DNA molecules coding for a GlcNAc-α1,3-fucosyl transferase comprising

(A) adding to a sample DNA molecules according to claim 46, and

(B) selecting molecules which bind to said DNA molecules of (A), wherein the molecules which bind code for a GlcNAc-α1,3-fucosyl transferase.

91. The method according to claim 90, wherein said sample comprises genomic DNA of a plant.

92. The method according to claim 90, wherein said sample comprises genomic DNA of an insect organism.

93. DNA molecules coding for a GlcNAc-α1,3-fucosyl transferase selected according to a method according to claim 90, and isolated from said sample.

94. DNA molecules coding for a GlcNAc-α1,3-fucosyl transferase selected according to a method according to claim 91, and isolated from said sample.

95. DNA molecules coding for a GlcNAc-α1,3-fucosyl transferase selected according to a method according to claim 92, and isolated from said sample.

96. A DNA molecule comprising a sequence according to SEQ ID NO 1 with an open reading frame from base pair 211 to base pair 1740.

97. A DNA molecule which is at least 70-80% homologous with the sequence according to SEQ ID NO 1, and codes for a plant protein having fucosyl transferase activity.

98. A DNA molecule which is at least 95% homologous with the sequence according to SEQ ID NO 1, and codes for a plant protein having fucosyl transferase activity.

99. A DNA molecule which hybridizes with the sequence according to SEQ ID NO 1 under stringent conditions, and codes for a plant protein having fucosyl transferase activity.

100. A DNA molecule comprising a sequence complementary to a sequence according to SEQ ID NO 1 with an open reading frame from base pair 211 to base pair 1740.

101. A DNA molecule comprising a sequence complementary to a sequence which

(A) is at least 70-80% homologous with the sequence according to SEQ ID NO 1, and

(B) codes for a plant protein having fucosyl transferase activity.

102. A DNA molecule comprising a sequence complementary to a sequence which

(A) is at least 95% homologous with the sequence according to SEQ ID NO 1, and

(B) codes for a plant protein having fucosyl transferase activity.

103. A DNA molecule comprising a sequence complementary to a sequence which

(A) hybridizes with the sequence according to SEQ ID NO 1 under stringent conditions, and

(B) codes for a plant protein having fucosyl transferase activity.

104. A DNA molecule comprising a sequence according to SEQ ID NO 3.

105. A DNA molecule comprising a sequence which is at least 85% homologous with a sequence according to SEQ ID NO 3.

106. A DNA molecule comprising a sequence which hybridizes with the sequence according to SEQ ID NO 3 under stringent conditions.

107. A DNA molecule comprising a sequence which is at least 95% homologous with a sequence according to SEQ ID NO 3.--